DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027411
Date Inspected: 30-Mar-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: Bernie Docena

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base 9 meter outer East external diaphragm, this QA Inspector randomly observed ABF personnel Wai Kitlai continuing to perform 2F (horizontal position) fillet production welding on the 25mm thick fit lug to the 45mm thick 9-meter outer East external diaphragm plate on one side and to the 65mm thick vertical stiffener plate on the other side. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1. 6mm diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 286 amperes and 23.6 volts. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. During the shift, the welder has completed the 22mm fillet weld on two sides of the five (5) fit lugs marked W091-19, W091-20, W091-21, W091-24 and W091-36. The welder has held the same preheat for three (3) hours after welding as required.

At Tower Base 9 meter outer East external diaphragm, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform 2F (horizontal position) fillet production welding on the 25mm thick fit lug to the 45mm thick 9-meter outer East external diaphragm plate on one side and to the 65mm thick vertical stiffener plate on the other

side. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1.6mm diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 273 amperes and 23.5 volts. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. During the shift, the welder has completed the 22mm fillet weld on two sides of the two (2) fit lugs marked W091-22 and W091-23. The welder has held the same preheat for three (3) hours after welding as required.

At Tower Base shear plate below 9 meter between inner East and outer East external diaphragms, this QA Inspector randomly observed ABF personnel Jin Pei Wang continuing to perform fillet welding on the 470mm diameter X 60mm thick doubler plate below the 9 meter diaphragm per drawing ED1-A29 A/B. The welder was noted fillet welding the doubler plate to the 60 mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. The doubler plate being welded was marked as weld joint A29 P1127 below 9M diaphragm. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates to more than 150°F prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F and measured the welding parameters to 130 amperes. The welder performed the production welding using the same SMAW process with 3.2mm diameter E7018H4R electrode until the end of the shift wherein the welder has completed the 10mm fillet all around on both sides of the double plate.

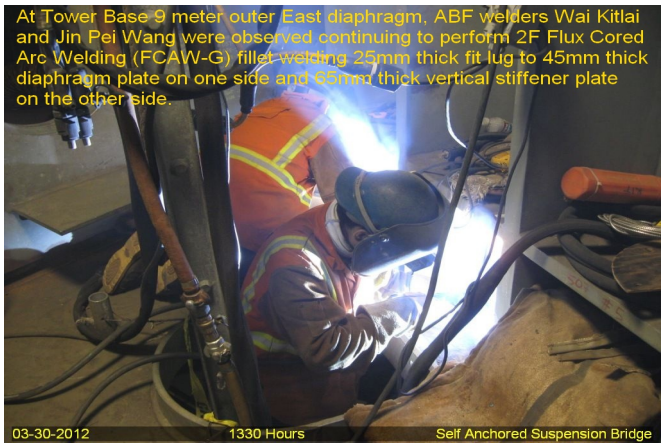
At Tower Base 9 meter inner West external diaphragm, this QA Inspector randomly observed ABF personnel Xiao Jian Wan continuing to perform 4F (overhead position) fillet production welding on the perimeter C10 channel to 45mm thick diaphragm plate fillet weld joint W099-1. The welder was noted welding 6mm fillet between one side of the channel top flange and diaphragm plate per detail 1 of FW3 drawing. The welder was using the 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 128 amperes on the 3.2mm diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-F1200A. At the end of the shift, SMAW fillet welding was still continuing and should remain Monday.

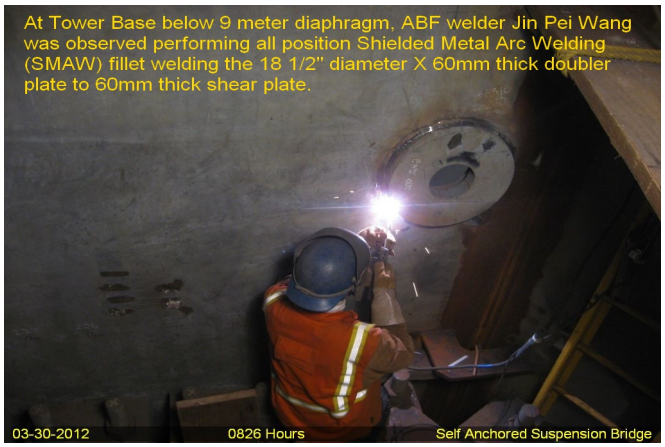
At Tower Base 9 meter inner West external diaphragm, this QA Inspector randomly observed ABF personnel Luo Xiao Hua continuing to perform 4F (overhead position) fillet production welding on the perimeter C10 channel to 45mm thick diaphragm plate fillet weld joint W099-2. The welder was noted welding 6mm fillet between one side of the channel top flange and diaphragm plate per detail 1 of FW3 drawing. The welder was using the 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 130 amperes on the 3.2mm diameter electrode. The welding

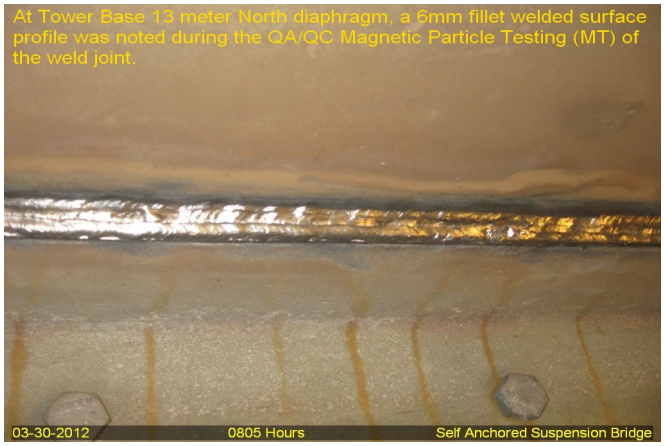
appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-F1200A. At the end of the shift, SMAW fillet welding was still continuing and should remain Monday.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the four (4) perimeter C10 channel to diaphragm plate fillet weld joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector at 13 meter North external diaphragm meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. W135-1 fillet weld joint – weld cover QA verified
2. W135-2 fillet weld joint – weld cover QA verified
3. W135-3 fillet weld joint – weld cover QA verified
4. W135-4 fillet weld joint – weld cover QA verified







Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials

for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer